OIPE JC177
FEB 05 2004
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Fig. 1

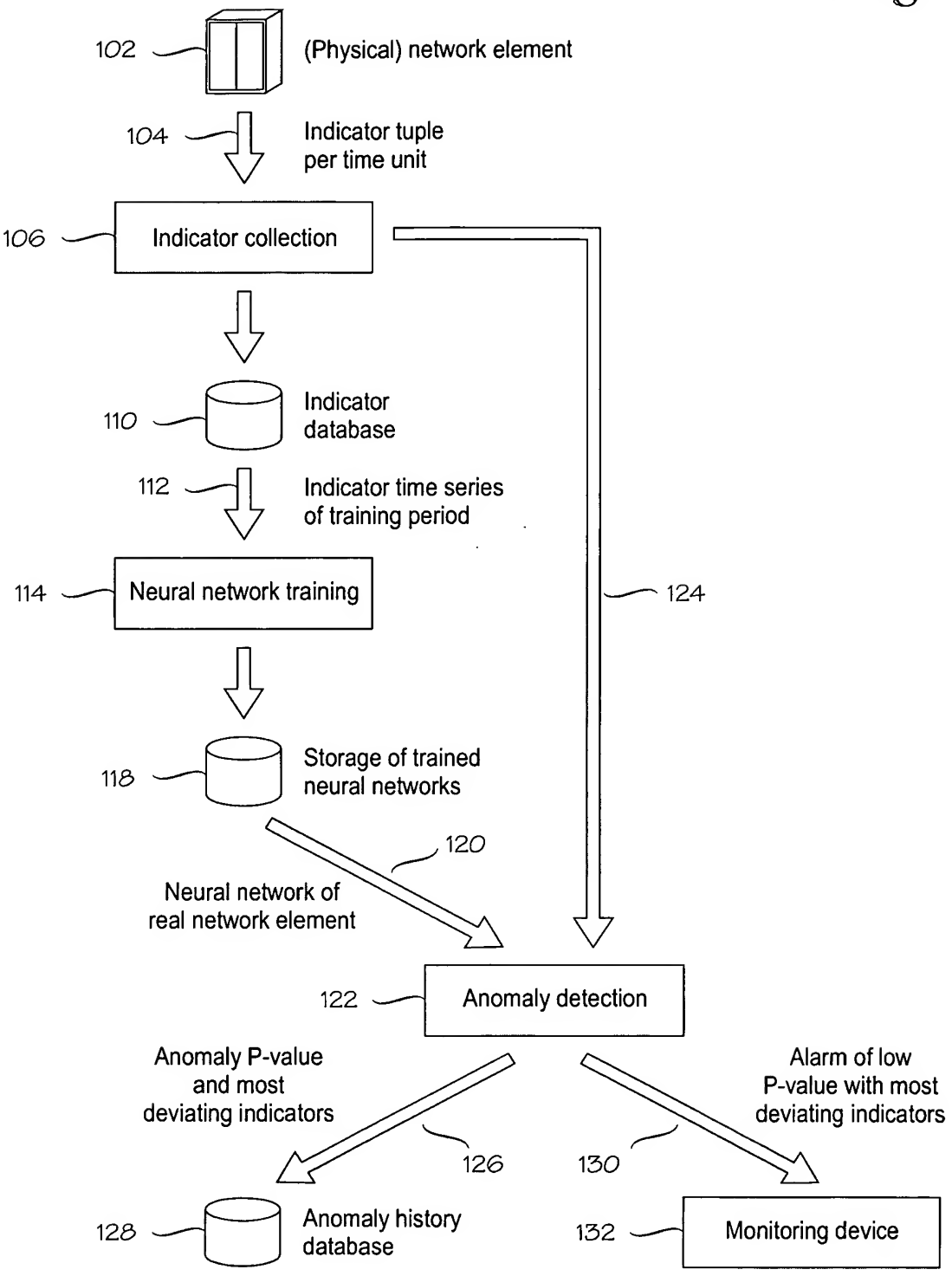


Fig. 2

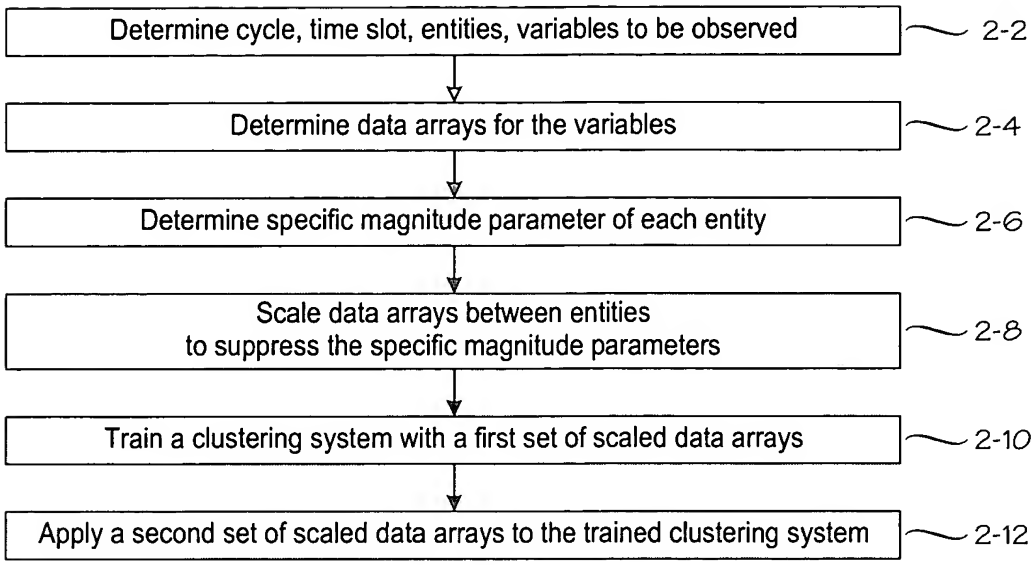

Determine cycle, time slot, entities, variables to be observed
2-2
Determine data arrays for the variables
2-4
Determine specific magnitude parameter of each entity
2-6
Scale data arrays between entities
to suppress the specific magnitude parameters
2-8
Train a clustering system with a first set of scaled data arrays
2-10
Apply a second set of scaled data arrays to the trained clustering system
2-12

Fig. 3

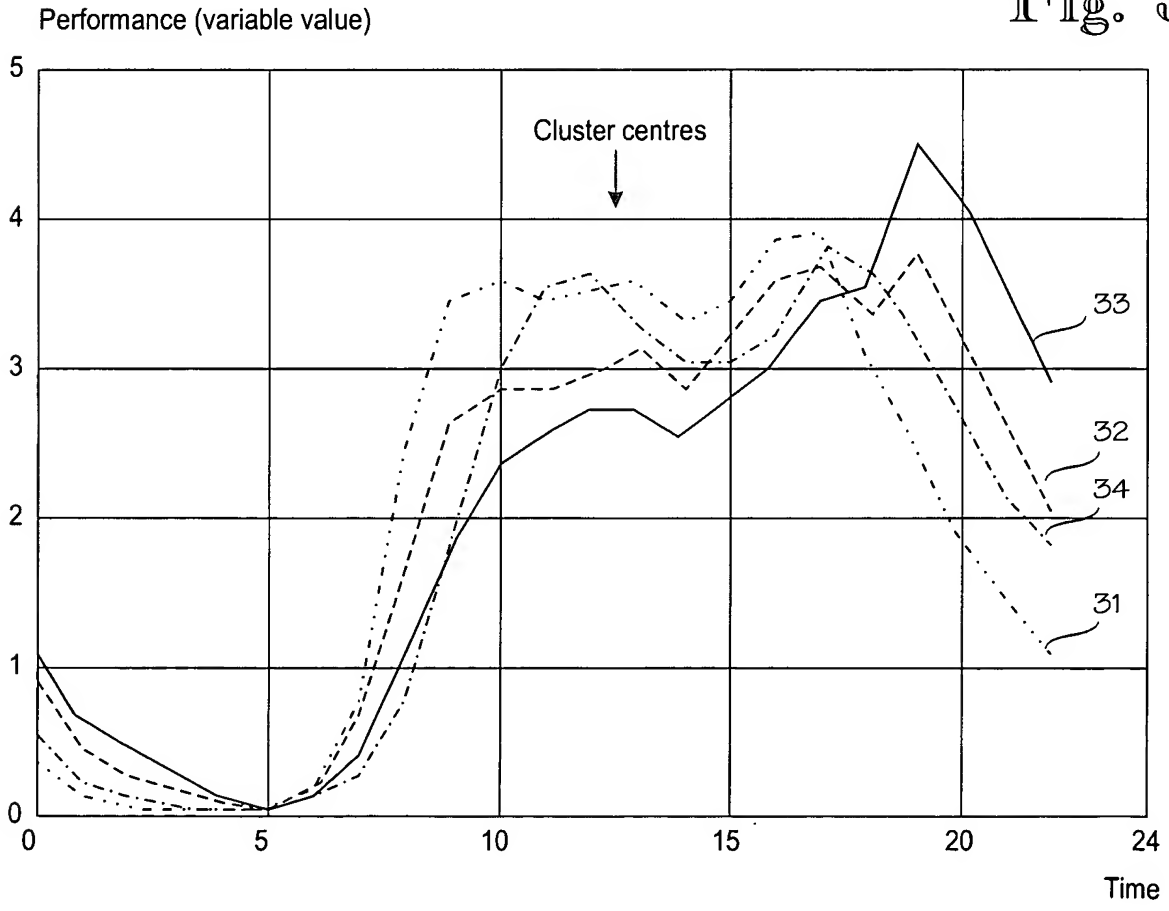

Performance (variable value)
5
4
3
2
1
0
Cluster centres
33
32
34
31
0
5
10
15
20
24
Time

Fig. 4A

40

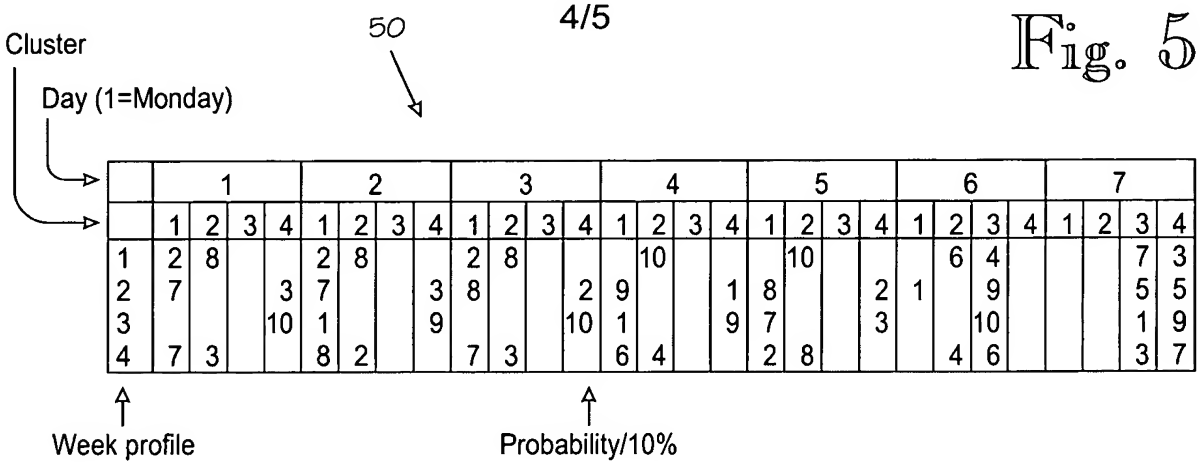
Day (1=Monday)	Cluster	Probability, %
1, 2, 3, 4, 7	4	100
5	1	83
	4	17
6	3	100

Fig. 4B

45

Day (1=Monday)	Cluster	Probability, %
1	1	-
	2	-
	3	-
	4	100
2	1	10
	2	-
	3	-
	4	90
3	1	-
	2	-
	3	-
	4	100
4	1	10
	2	-
	3	-
	4	90
5	1	70
	2	-
	3	-
	4	30
6	1	-
	2	-
	3	100
	4	-
7	1	-
	2	-
	3	10
	4	90

Fig. 5



	1				2				3				4				5				6				7			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	2	8			2	8			2	8				10				10				6	4				7	3
2	7			3	7			3	8			2	9			1	8			2	1		9				5	5
3				10	1			9				10	1			9	7			3			10				1	9
4	7	3			8	2			7	3			6	4			2	8				4	6				3	7

Fig. 6

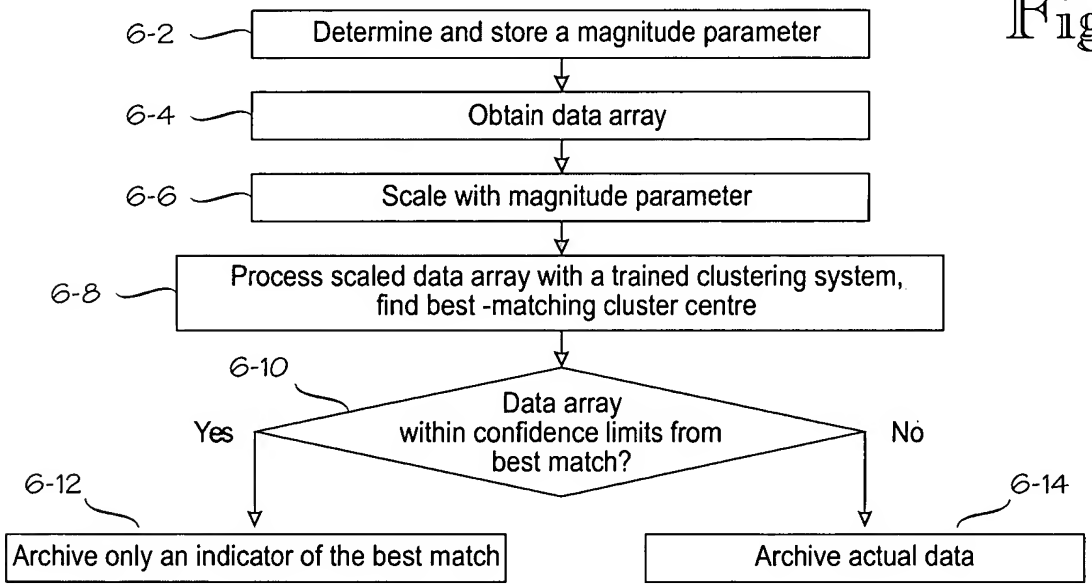
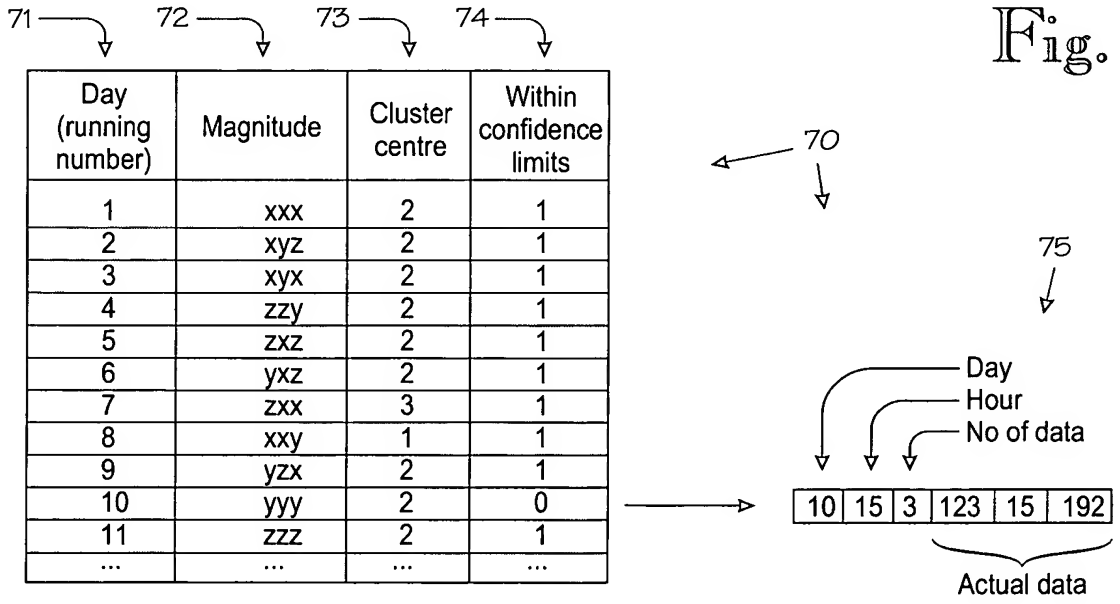


Fig. 8



Day (running number)	Magnitude	Cluster centre	Within confidence limits
1	xxx	2	1
2	xyz	2	1
3	xyx	2	1
4	zzy	2	1
5	zxz	2	1
6	yxz	2	1
7	zxx	3	1
8	xxy	1	1
9	yzx	2	1
10	yyy	2	0
11	zzz	2	1
...	...	...	...

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Fig. 7

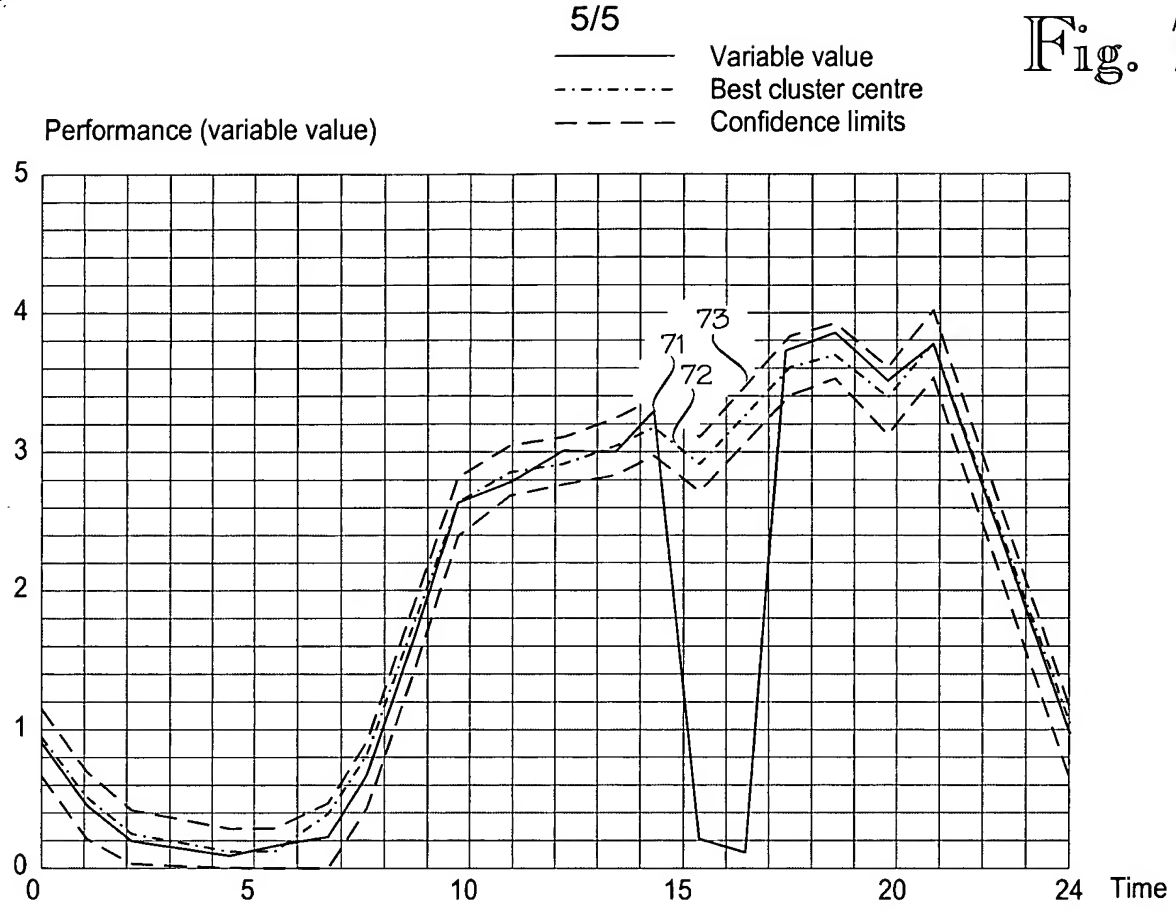
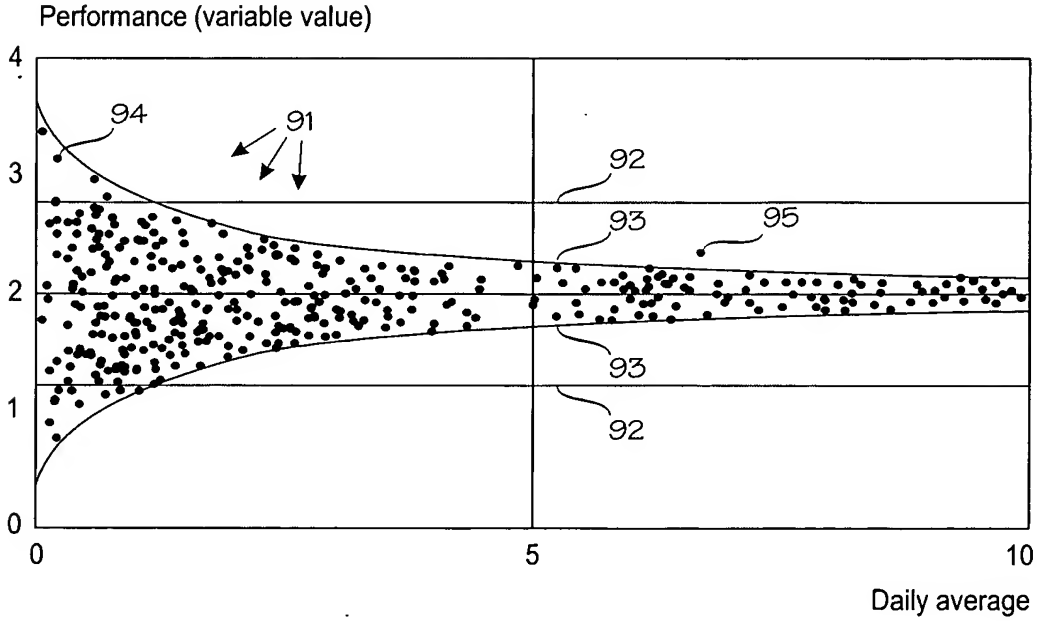
Fig. 9